

CLAIMS

What is claimed is:

1. A slurry, comprising:
 - a) a liquid;
 - b) abrasive grains;
 - c) a bonding material;
 - d) an ionically cross-linkable polymer; and
 - e) at least one cross-linking agent.
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 2. The slurry of Claim 1, wherein the cross-linking agent is selected from the group consisting of calcium chloride and yttrium nitrate.
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 3. The slurry of Claim 1, wherein the liquid includes deionized water.
 4. The slurry of Claim 3, wherein the liquid further includes a dispersant.
 5. The slurry of Claim 4, wherein the dispersant includes ammonia polyacrylate.
 6. The slurry of Claim 1, wherein the abrasive grains include alumina.
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 7. The slurry of Claim 1, wherein the abrasive grains include silicon carbide.
 8. The slurry of Claim 1, wherein the diameter of the abrasive grains is in a range of between about one micron and about thirty microns.

9. The slurry of Claim 1, wherein the abrasive grains are present in the slurry in an amount in the range of between about 55 weight percent and about 70 weight percent of the slurry.
10. The slurry of Claim 1, wherein the bonding material includes a glass frit.
- 5 11. The slurry of Claim 10, wherein the glass frit includes aluminosilicate glass.
12. The slurry of Claim 11, wherein the glass frit particles have an average diameter in a range of between about five microns and about thirty microns.
- 10 13. The slurry of Claim 12, wherein the glass frit particles are present in an amount in a range of between about 3.5 weight percent and about 7 weight percent of the slurry.
14. The slurry of Claim 1, wherein the ionically cross-linking slurry includes a water-soluble polysaccharide.
15. The slurry of Claim 14, wherein the water-soluble polysaccharide includes a food grade heteropolysaccharide.
- 15 16. The slurry of Claim 15, wherein the food grade heteropolysaccharide includes gellan gum.
17. The slurry of Claim 1, wherein the ionically cross-linking polymer includes sodium alginate.

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18. The slurry of Claim 1, wherein the ionically cross-linking polymer is present in an amount in a range of between about 0.2 weight percent and about 1.0 weight percent of the combined polymer and liquid weight.
19. A green-stage article, comprising:
- 5 a) abrasive grains;
 b) a vitrified glass; and
 c) an ionically cross-linked polymer.
20. The article of Claim 19, wherein the abrasive grains include alumina.
21. The article of Claim 19, wherein the abrasive grains include silicon carbide.
- 10 22. The article of Claim 19, wherein the diameter of the abrasive grains is in a range of between about one micron and about thirty microns.
23. The article of Claim 19, wherein the vitrified glass includes aluminosilicate glass.
- 15 24. The article of Claim 19, wherein the ionically cross-linked polymer includes a water-soluble polysaccharide.
25. The article of Claim 24, wherein the water-soluble polysaccharide includes a food grade heteropolysaccharide.
26. The article of Claim 25, wherein the food grade heteropolysaccharide includes gellan gum.

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27. The articles of Claim 25, wherein the food grade heteropolysaccharide includes sodium alginate.

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